[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-1329; Directorate Identifier 2012-NE-46-AD; Amendment 39-17479; AD 2013-12-02]

RIN 2120-AA64

Airworthiness Directives; Engine Alliance Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Engine Alliance GP7270 and GP7277 turbofan engines. This AD was prompted by damage to the high-pressure compressor (HPC) stage 7-9 spool caused by failure of the baffle plate feature on affected HPC stage 6 disks. This AD requires initial and repetitive borescope inspections of the baffle plate feature and removal from service of the HPC stage 6 disk if the plate is missing material. This AD also requires mandatory removal from service of these HPC stage 6 disks at the next HPC module exposure. We are issuing this AD to prevent failure of the HPC stage 7-9 spool, uncontained engine failure, and damage to the airplane.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (phone: 800-647-5527) is Document Management Facility, U.S. Department of

Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Martin Adler, Aerospace Engineer, Engine & Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7157; fax: 781-238-7199; email: martin.adler@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM published in the Federal Register on February 7, 2013 (78 FR 9003). That NPRM proposed to require initial and repetitive borescope inspections of the HPC stage 6 disk baffle plate feature and removal from service of any HPC stage 6 disk, part number (P/N) 382-100-505-0, before further flight if the feature is missing any material. That NPRM also proposed to require mandatory removal from service of these HPC stage 6 disks at the next HPC module exposure, but no later than accumulating 6,800 cycles-since-new on the disk.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the proposal and the FAA's response to each comment.

Request to Allow Continue-In-Service Limits for the Baffle Plate Feature

Engine Alliance and Korean Airlines requested that we allow continue-in-service limits for the baffle plate feature. Engine Alliance stated that they have performed extensive analysis showing that the risk in doing so, is minimal. Both commenters point out the potential inconveniences to the flying public, and the potential economical and logistical impacts on air carriers.

We agree. We changed paragraph (f)(4) of the AD to state to remove the HPC stage 6 disk within 50 additional cycles-in-service, if the baffle plate feature is found cracked or missing material.

Request to Remove References to Damage Causing Cracks to the HPC 7-9 Spool

Engine Alliance requested that we remove the reference to damage causing cracks to the HPC 7-9 spool, in the Discussion paragraph of the NPRM (78 FR 9003, February 7, 2013). Engine Alliance stated that there has been no cracking of the spools related to the baffle plate feature problem, to-date, but there is potential for cracking, and they suggested that we state there is potential for cracking.

We partially agree. We agree that there has been no cracking yet. We do not agree with stating there is potential for cracking, because we wouldn't be issuing an AD if cracking couldn't happen. We did not change the AD.

Request to Include Engine Alliance Service Bulletins (SBs)

Engine Alliance and Korean Airlines requested that we include Engine Alliance SBs No.s EAGP7-72-237 and EAGP7-72-240 as terminating action for this AD. The SBs introduce the new design of the HPC stage 6 disk either by repair or a new part, which eliminates the unsafe condition.

We partially agree. We agree that a repaired HPC stage 6 disk should be allowed to be installed as a terminating action for the AD, as well as installing the new P/N HPC stage 6 disk. We changed paragraph (g) in the AD from "At next HPC module exposure, but not to exceed 6,800 CSN on the HPC stage 6 disk, remove the HPC stage 6 disk, P/N 382-100-505-0, from service" to allow use of the repaired part. Paragraph (g) of this AD now reads: "At next HPC module exposure, but not to exceed 6,800 CSN on the HPC stage 6 disk, remove the HPC stage 6 disk, P/N 382-100-505-0, from the engine." We do not agree with stipulating the SBs as terminating actions because we do not want to

prevent future configurations from being terminating action. However, we listed those SBs under Related Information in the AD.

Request to Define When Undamaged Part Replacement is Required

Engine Alliance requested that we define when undamaged part replacement is required, from module level to rotor assembly exposure. They stated that disk removal involves a full teardown of the compressor module, which can only be performed at specialized repair facilities. There is maintenance that can be performed at other facilities not qualified for a full teardown, which could involve removal and installation of a complete compressor module.

We agree. We changed paragraph (i) in the AD from: "For the purpose of this AD, HPC module exposure is defined as separation of the flanges between the compressor case and the combustion diffuser case" to: "For the purpose of this AD, HPC module exposure is defined as disassembly of the compressor to where the HPC rotor assembly is removed and accessible."

Conclusion

We reviewed the relevant data, considered the comments received, and determined that air safety and the public interest require adopting the AD with the changes described previously. We have determined that these minor changes:

- Are consistent with the intent that was proposed in the NPRM (78 FR 9003, February 7, 2013) for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM (78 FR 9003, February 7, 2013).

We also determined that these changes will not increase the economic burden on any operator or increase the scope of the AD.

Costs of Compliance

We estimate that this AD will affect no engines installed on airplanes of U.S. registry, and the cost to U.S. operators to be $0.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Is not a "significant rule" under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska to the extent that it justifies making a regulatory distinction, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

2013-12-02 **Engine Alliance:** Amendment 39-17479; Docket No. FAA-2012-1329; Directorate Identifier 2012-NE-46-AD.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Engine Alliance GP7270 and GP7277 turbofan engines with a high-pressure compressor (HPC) stage 6 disk, part number (P/N) 382-100-505-0, installed.

(d) Unsafe Condition

This AD was prompted by damage to the HPC stage 7-9 spool caused by failure of the baffle plate feature on affected HPC stage 6 disks. We are issuing this AD to prevent failure of the HPC stage 7-9 spool, uncontained engine failure, and damage to the airplane.

(e) Compliance

Comply with this AD within the compliance times specified, unless already done.

(f) Borescope Inspections

(1) For HPC stage 6 disks with fewer than 1,000 cycles- since- new (CSN) on the effective date of this AD, initially borescope inspect the baffle plate feature on the disk (360 degrees) before accumulating 1,500 CSN.

(2) For HPC stage 6 disks with 1,000 CSN or more on the effective date of this AD, initially borescope inspect the baffle plate feature on the disk (360 degrees) within the next 500 cycles-in-service (CIS).

(3) Thereafter, repetitively borescope inspect the baffle plate feature on the disk (360 degrees) within every 500 CIS.

(4) Remove the HPC stage 6 disk within 50 additional CIS, if the baffle plate feature is found cracked or missing material.

(g) Mandatory Removal From Service of Affected HPC Stage 6 Disks

At next HPC module exposure, but not to exceed 6,800 CSN on the HPC stage 6 disk, remove the HPC stage 6 disk, P/N 382-100-505-0, from the engine.

(h) Installation Prohibition

After the effective date of this AD, do not install any HPC stage 6 disk, P/N 382-100-505-0, into any HPC module.

(i) Definition

For the purpose of this AD, HPC module exposure is defined as disassembly of the compressor to where the HPC rotor assembly is removed and accessible.

(j) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(k) Related Information

(1) For more information about this AD, contact Martin Adler, Aerospace Engineer, Engine & Propeller Directorate, FAA, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7157; fax: 781-238-7199; email: martin.adler@faa.gov.

(2) Engine Alliance Service Bulletin Nos. EAGP7-72-236, EAGP7-72-237, and EAGP7-72-240, pertain to the subject of this AD.

(3) For service information identified in this AD, contact Engine Alliance, 411 Silver Lane, East Hartford, CT 06118, phone: 800-565-0140; website: https://www.engineallianceportal.com. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(l) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on June 7, 2013.

Robert J. Ganley,
Acting Assistant Manager, Engine & Propeller Directorate,
Aircraft Certification Service

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